TBONE on the menu

New Web-based air ops software will speed planning and execution

U.S. AIR FORCE

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The Theater Battle Operations Net-centric Environment would reduce the size of air operations centers, such as the Southwest Asia center that handles aerial missions in Iraq and Afghanistan, by allowing the Air Force to move information around the world, rather than people and hardware.

The U.S. Air Force is transforming its air operations to enable global command and control of air power as a result of lessons learned in Operation Iraqi Freedom. An advanced capability that will help U.S. and coalition forces plan those operations as well as share information is in development. Now in its early prototype stage, the Theater Battle Operations Net-centric Environment (TBONE) includes a multilevel security database and information services. TBONE software will support global air operations planning and execution and increase situational awareness among participants.

Behind TBONE is the Command and Control Battle Lab of the Air Force Command and Control, Intelligence, Surveillance and Reconnaissance Center at Langley Air Force Base, Va. Industry partners Intelligent Software Solutions and Oracle are doing the software and database development.

A TBONE demonstration recently was conducted at the Air Force Command and Control Transformation Center at Langley. That facility played the role of an air operations center deployed overseas in the demonstration and generated air tasking orders — aircraft assignments for the next day's missions — in collaboration with participating aviation units. Demonstrated capabilities were done independent of the current system of record, and the units participated through Web interfaces.

The air operation center's current Theater Battle Management Control System was designed to support air operations in a linear, static environment. As new requirements were identified, additional databases were created. As a result, the system is overly complex, inflexible and difficult to deploy and maintain.

While assessing Iraqi Freedom shortfalls and systems, it became apparent that innovative and revolutionary needs of future commanders could not be built on the basis of existing systems, no matter how good those systems are individually. TBONE leverages the lessons learned but has started from a clean slate regarding technical architecture.

TBONE will provide commanders a global, network-centric capability for planning, monitoring, executing and assessing air operations. The new capability will enable a streaming air tasking order to support dynamic operations across the globe. In addition, units will gain insight into air operations planning and will be able to collaborate earlier on the air plan. This will permit fewer unit-level liaison officers in the air operations center, thus reducing its manning and footprint in an overseas theater. The network-centric approach will allow the Air Force to move information rather than people and hardware.

Organizations requesting air support will have the ability to specify their request in terms of desired battlefield effects. Today's system requires organizations to nominate specific targets and air assets, which may or may not match the air component commander's intent and priorities. By moving toward an effects-based request system for targeting support, air operations will gain considerable flexibility and make more effective use of high-demand, low-density aircraft assets.

The Multi-Level Security portion of TBONE will allow information to pass securely among networks and coalition partners. Current solutions to this problem require policy waivers and an enormous amount of individual effort, hardware and software because of the legacy data environment. TBONE's goal is to make various networks and coalition members transparent to end-users while ensuring information security and reliability via an air campaign database.

Interoperability with Army, Navy and Marine Corps systems also is being addressed. Current systems rely heavily on conversion of graphic displays into text messages, then exchanging those text messages between systems. TBONE will make many exchanges with the other services' systems a machine-to-machine exchange, reducing the time it takes to find, target and engage targets, and easing integration of air, space and surface systems. ∎

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